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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,035	10/13/2004	Kenichi Nakamura	019519-440	6280
21839	7590	10/19/2007		
BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			EXAMINER JACKSON, MONIQUE R	
			ART UNIT 1794	PAPER NUMBER
			NOTIFICATION DATE 10/19/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/511,035

Applicant(s)

NAKAMURA ET AL.

Examiner

Monique R. Jackson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4 and 6-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4 and 6-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The amendment filed 8/6/07 has been entered. Claims 2 and 5 have been canceled.

Claims 1, 3, 4, and 6-32 are pending in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 1, 3, 4 and 6-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP '093 in view of Beck et al (USPN 2,992,122.)

As discussed in the prior office action, EP'093 teaches the same structure as the claimed anti-reflection film, polarizing plate comprising the anti-reflection film, and image display device using the anti-reflection film or the polarizing plate wherein the anti-reflection film comprises a laminate of a high-refractive index layer having a refractive index of 1.65-2.40 comprising 5-65% by volume of inorganic fine particles having an average particle size of 1-200nm and 35-95% by volume of a polymer; and a low-refractive index layer having a refractive index of 1.30-1.55 (Abstract; Paragraph 0039.) EP'093 teaches that the inorganic particles have a core-shell structure with the core composed mainly of titanium dioxide and the shell composed mainly of an inorganic compound other than titanium dioxide, preferably alumina, silica or zirconia; with other elements for the inorganic particle including Zr and Al; wherein the amount of the shell is 2-50wt% to the core and wherein the term "composed mainly" means that this component is largest in content by weight amount all constituent components (hence the Examiner takes the position that upon formation of the core-shell structure, a small or minor amount of the "shell" material is inherently present within the "core"; Paragraph 0002; Page 5,

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lines 45-50; Page 9, line 40-Page 10, line 20.) EP'093 teaches that the core-shell particles have a specific surface area of preferably 10-400 m²/g, and may be surface treated with an organic compound including polyol, alkanolamine, stearic acid, titanate, or preferably a silane coupling agent (Paragraphs 0070, 0072.) The inorganic particles are utilized in a dispersed state with examples of the dispersing medium listed in paragraph 0075. EP'093 teaches that the high-refractive index layer further includes a crosslinking polymer having an anionic group which functions to maintain the dispersion state of the inorganic fine particles and a repeating unit having a crosslinking structure (0077-0087) and is formed by adding a monomer thereof to a dispersion of the inorganic fine particles and then conducting crosslinking reaction or polymerization of the monomer at the same time or after coating the solution (hence reads upon a dispersant; Paragraphs 0077-0087 and 0093.) EP'093 also teaches the general structure of suitable silane coupling agents which reads upon the claimed silane compounds which lower or eliminate photocatalytic active as in instant claim 9 (Page 15.) EP'093 teaches that the anti-reflection film preferably has a transparent support. EP'093 further teaches that the low-refractive layer includes an overcoat layer of fine particles of fluorine-containing compound that fill into some of the voids of the low-refractive layer (Paragraphs 0172-0174.) The fluorine-containing compound is preferably a fluorine-containing polymer including a copolymer of a fluorine-containing vinyl monomer as instantly claimed with an ethylenically unsaturated monomer containing no fluorine atom including those as disclosed in paragraph 0181 and preferably has a crosslinking or polymerizable group in a side chain, including acryloyl and methacryloyl groups (as in instant claim 19.) EP'093 further teaches the claimed structure for the polarizing plate structure and image display device as instantly claimed. Though EP'093

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does not specifically teach that the disclosed shell material on the inorganic titanium dioxide particles or the silane coupling agent lower or eliminate the photocatalytic activity of the particles, the Examiner takes the position that the disclosed shell materials and silane coupling agent, being the same compounds as instantly claimed, would inherently provide the same effect on the photocatalytic activity of the particles.

Though EP'093 teach various inorganic elements that can be incorporated into or coated on the inorganic particles, namely the titanium dioxide particles, EP'093 does not specifically teach the use of Co, however as previously discussed, Co is an obvious, functionally equivalent metal compound to those disclosed by EP'093 and would have been obvious to one skilled in the art at the time of the invention. Further, Beck et al teach that cobalt oxide and titanium dioxide both produce optical articles with a high refractive index and are similar in structure and appearance, wherein a preferred high-index optical element would comprise a mixture of both. Therefore, given the state of the art and the use of mixed oxides in the art and as taught by EP'093, one having ordinary skill in the art would have been motivated to utilize titanium dioxide doped or mixed with other metals or metal oxides including cobalt oxide, which as taught by Beck et al, is functionally equivalent in terms of high refractive index and structure to titanium dioxide given the reasonable expectation of success and the lack of a clear showing of unexpected results.

Though EP'093 teach the low refractive layer comprises a fluorine-containing polymer including a copolymer of a fluorine-containing vinyl monomer as instantly claimed with an ethylenically unsaturated monomer containing no fluorine atom including those as disclosed in paragraph 0181 and preferably has a crosslinking or polymerizable group in a side chain,

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including acryloyl and methacryloyl groups, EP'093 does not specifically teach the mol % ranges as instantly claimed. However, given that EP'093 generally describe the function of the disclosed comonomers, one skilled in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the amount of each monomer, within the broad range of 0-100mol%, to provide a fluorine-containing polymer with the desired properties.

Response to Arguments

4. Applicant's arguments and declaration filed 8/6/07 have been fully considered but they are not persuasive. The Applicant argues that titanium dioxide particles doped with cobalt provide alleged surprising and unexpected results over iron doped, aluminum doped and zirconium doped titanium dioxide. However the Examiner first notes that EP'093 teach a number of metals that may be incorporated into the titanium dioxide particles, see Paragraphs 0059 and 0060 on pages 9-10 as recited above, aside from Fe, Al, and Zr, and hence, the Applicant has not provided a sufficient showing over the prior art. In addition, the Examiner notes that the Applicant has not provided any showing with respect to the light resistance characteristics of cobalt oxide alone, and hence it is unclear whether the increase in light resistance is due to a synergistic effect or merely to the incorporation of the cobalt oxide, wherein it is already recognized in the art that cobalt oxide has improved characteristics over other metal oxides as taught by Beck et al. Further, the Examiner notes that the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be

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obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). Hence, the Examiner maintains her position that the invention would have been obvious over EP'093.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

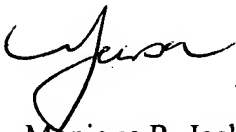
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R. Jackson whose telephone number is 571-272-1508. The examiner can normally be reached on Mondays-Thursdays, 10:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Monique R. Jackson
Primary Examiner
Technology Center 1700
October 15, 2007